Status on Beam Spot Monitoring & Feedback

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Planned Procedures

- Action for a store of beam -- Beam Position Calibration
  - To provide the store-specific beam parameters → the beam position reference point
  - Done for each store of Tevatron beam
  - Beam parameters kept in the online calibration ORACLE database
- Action for a data run -- Beam Parameter Update and Downloading
  - Update beam parameters if a change (compared to the "store" values) takes place
  - Used as run-specific configuration parameters for L2STT etc

Planned Procedures (cnt'd)

- Action during data taking -- Beam Position Monitoring and Feedback
  - Continuous monitoring – EXAMINE
    (How often the update?)
    - For daily shifters
    - For accelerator control people
  - Feedback triggers when deviations exceed preset thresholds
    - To ACNET dipole correctors for bringing back the beam spot
  - New beam parameters will be entered into online/offline database after feedback correction
    - To be used for beam parameter update
    - For later-on beam history study

Feedback from Online Group

- Concern about data stream traffic load on DD (Data Distributor) → Vertex EXAMINE
  - How many events(or tracks) are needed for each primary vertex reconstruction?
  - How often do we need to update Vertex EXAMINE monitoring?
- Do we need to put the beam information into the event record? → A general issue of whether slow data be put into the event stream
  - Probably not?

Feedback from Online Group (cont'd)

- Access from D0 control to ACNET
  - EPICS/ACNET interface already in place
  - Permission needed for ACNET device access
- Exception Handling
  - Needs to be integrated into D0 SES (Significant Event System)
- Contacted Paul Derwent (CDF)
  - D0 dipole correctors(C4 and D1) have the same correction range as CDF

Future Plan

- Communication software
  - An overall draft design: including feedback communication and link to SES etc
  - To build a client running on the EXAMINE machine to talk to ACNET (via EPICS Channel Access calls in C)
- Further planning
  - Integration with Vertex EXAMINE
  - Offline testing and future online beam testing
  - Others etc…